



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/550,738

09/26/2005

Hiroatsu Endo

10517/299

8333

23838 7590 08/04/2009

KENYON & KENYON LLP
1500 K STREET N.W.
SUITE 700
WASHINGTON, DC 20005

EXAMINER

COOLMAN, VAUGHN

ART UNIT

PAPER NUMBER

3618

MAIL DATE

DELIVERY MODE

08/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,738	Applicant(s) ENDO, HIROATSU	
	Examiner VAUGHN T. COOLMAN	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3618

DETAILED ACTION

Claim Objections

All previous claim objections have been addressed by applicant in the response filed 05/01/2009 and are hereby withdrawn.

Claim Rejections - 35 USC § 112

All previous rejections under this section have been addressed by applicant in the response filed 05/01/2009 and are hereby withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tabata et al (U.S. Patent No. 5833570).

[claim 1] Tabata discloses a control apparatus for a drive apparatus of a hybrid vehicle, in which a motor (14) is connected to an output member (19) connected to a main power source (12) through a torque transmitting member (B2) whose torque capacity is changed according to an engagement control amount, comprising:

Maintaining means (156) for maintaining a rotational speed of the motor at a predetermined rotational speed;

Art Unit: 3618

Changing means (146) for continuously changing the engagement control amount while the maintaining means maintains the rotational speed of the motor at the predetermined rotational speed (see FIG 19 between 'shift-up command' and 'initiation of inertia phase'); and

Learning means (160) capable of learning a relationship between output torque of the motor for maintaining the rotational speed of the motor at the predetermined rotational speed and the engagement control amount when the output torque of the motor reaches a predetermined value while the engagement control amount is changed.

[claim 2] Tabata further discloses detecting means (motor ammeter 63) for detecting initial output torque of the motor (as it relates to the torque of the output shaft) while the engagement control amount is zero (as shown in FIG 19), and the predetermined value is set to a value obtained by adding predetermined torque to the initial output torque detected by the detecting means. In FIG 19, the initial motor torque must be known in order to follow the change in motor torque with respect to time. The predetermined torque is the motor torque value immediately prior to initiation of inertia phase, at the inflection point on the change of motor torque graph.

[claim 5] Examiner notes that the control method is inherent in the apparatus as rejected above in re claim 1.

[claim 6] Examiner notes that the first through third control devices as claimed are disclosed by Tabata as follows: first device is item 56; second device is item 146; third device is item 160. The remaining claim limitations are rejected as above in re claim 1.

Art Unit: 3618

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata in view of Eguchi et al (U.S. Patent Application Publication No. US 2003/0109360 A1).

[claims 4 and 9] Tabata discloses all of the elements of the claimed invention as described above except for the time and place of the learning process of the engagement control amount and the output torque of the motor. Eguchi teaches the desirability of setting the engaging condition of a frictionally engaging element being changed to measure initial control value at the factory [paragraph 0011]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Tabata with the adjustment of the vehicle on a production line as taught by Eguchi in order to provide the advantage of improving the overall efficiency of the vehicle.

Response to Arguments

Applicant's arguments filed 05/01/2009 have been fully considered but they are not persuasive.

Regarding applicant's assertion on page 7 of the remarks that Tabata does not disclose "learning a relationship between an output torque of the motor for maintaining the rotational

Art Unit: 3618

speed of the motor at the predetermined rotational speed and the engagement control amount when the output torque of the motor reaches a predetermined value while the engagement control amount is changed”, an analysis of the claim language against Tabata’s entire disclosure shows that he indeed discloses learning a relationship (constantly updating stored data maps with the relationship between the duty ratio of the control device for the coupling means and the change in motor torque) between an output torque of the motor for maintaining the rotational speed of the motor at the predetermined rotational speed (the relative motor shaft 14r speed to the output shaft 26 speed at which shifting takes place) and the engagement control amount (initial engaging pressure of the coupling means) when the output torque of the motor reaches a predetermined value while the engagement control amount is changed (see the ‘shift-up command’ vertical line in FIG 19 and follow to the right – N_{subI} is the input shaft speed which has a direct relationship to motor speed which is steady as PB2 is changed and the change in motor torque reaches a maximum value or predetermined threshold in relation to initial motor torque).

Regarding applicant’s assertion on page 8 of the response that Tabata lacks any teaching of a learning means, learning step, or third control device, Examiner notes that the Merriam-Webster defines the word ‘device’ as “a piece of equipment or a mechanism designed to serve a special purpose or perform a special function” and the word ‘mechanism’ as “a process, technique, or system for achieving a result”. As such, the third control device is indeed disclosed by Tabata as item 160, learning compensation data map memory means, which is the system for achieving a result (inputting and outputting the modified data maps) and is designed to perform a special function (learn the relationship by storing the constantly modified maps which are a log

Art Unit: 3618

of the relationship). The learning means is also item 160 as the memory of the constantly modified maps is the learned material, just as the repeated access (input and output) of the memory of times table stored in a person's brain is ultimately the learning means for times tables. The learning step is disclosed by Tabata in column 25, lines 36+ and column 26, lines 1-23 wherein "depending upon whether the adequate initial engaging pressure of the coupling means was obtained in the past" a duty ratio associated with the engaging pressure of the coupling means is changed in the data maps and is evaluated, or learned, by monitoring the change in motor torque output.

Regarding applicant's assertion at the bottom of page 8 that Tabata does not describe adding a predetermined torque to the initial output torque, again in FIG 19 follow to the right and the change in motor torque reaches a maximum value (or a predetermined value that is set) in relation to initial motor torque and the detecting means is still the motor ammeter as described by Tabata. Furthermore Tabata describes monitoring how the motor torque changes in an absolute value of compensation and the data maps being updated to store input shaft torque values in order to effectively apply motor torque changes and engaging pressure to reduce shifting shock. One must know the initial motor torque, as detected by the motor ammeter, in order to effect any change in motor torque to aid in this process. The motor torque feedback control of Tabata constantly adds predetermined torque values constantly to the initial torque value until the output torque of the motor reaches a certain value in which the shifting is complete and the engagement control amount of the coupling means (torque transmitting member) is also changed during this time and the resulting data updated (learned) and stored in order to better carry out the process during the following iterations.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAUGHN T. COOLMAN whose telephone number is (571)272-6014. The examiner can normally be reached on Monday thru Friday, 10am-8pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dickson Paul can be reached on (571) 272-7742. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GLENN DAYOAN/
Supervisory Patent Examiner, Art Unit 3612

VAUGHN T COOLMAN
Examiner
Art Unit 3618

/V. T. C./
Examiner, Art Unit 3618